

CLAIMS

1. A process for preparing propylene polymer compositions in an at least two-stage process, wherein,
in a first stage, a propylene homopolymer or a propylene copolymer comprising propylene and at least a C₂-C₁₀-1-alkenes other than propylene, containing at least 85% by weight of propylene, is prepared by polymerization and,
in a second stage, ethylene and at least a comonomer selected from propylene and C₄-C₁₀-1-alkenes are polymerized to give an ethylene polymer comprising at least 90% by weight of ethylene,
wherein the amount of the ethylene polymer in the propylene polymer composition ranges from 10 to 50% by weight and the propylene polymer composition has a melt flow rate MFR, in accordance with ISO 1133 at 230°C and 2.16 kg, of from 2 to 50 g/10 min.
2. The process as claimed in claim 1, wherein the propylene homopolymer or propylene copolymer prepared in the first stage has a melt flow rate MFR, in accordance with ISO 1133 at 230°C and 2.16 kg, of from 5 to 150 g/10 min.
3. The process as claimed in claim 1 or 2, wherein a propylene homopolymer is produced in the first stage and a copolymer of ethylene with propylene is produced in the second stage.
4. The process as claimed in any one of claims 1 to 3, wherein both the first and the second polymerization stages are carried out in gas phase.
5. The process as claimed in claim 4, wherein in the first stage the polymerization is carried out at a pressure of from 10 to 50 bar and a temperature of from 50 to 100°C, in the presence of a polymerization-active catalyst system; the polymer obtained in the first stage together with the catalyst is introduced into an intermediate vessel, depressurized to less than 5 bar for from 0.01 to 5 minutes and the pressure in the intermediate vessel is then increased from 5 to 60 bar by injection of a gas mixture whose composition differs from the composition of the gas mixture of the first polymerization stage; the polymer together with the catalyst is subsequently transferred to the second polymerization stage and further polymerized at a pressure of from 10 to 50 bar and a temperature of from 50 to 100°C.

6. The process as claimed in any one of claims 1 to 5, wherein the ethylene polymer formed in the second stage is produced without any propylene being introduced into the reactor or reactors of this polymerization stage or into any intermediate vessel used.
7. The process as claimed in any of claims 1 to 6, wherein the second polymerization stage is followed by a further stage in which an ethylene-C₃-C₁₀-1-alkene copolymer having a crystallinity lower than that of the ethylene polymer formed in the second stage is polymerized.
8. A process for preparing polymer compositions, comprising preparing a propylene polymer composition by a process as claimed in any one of claims 1 to 6, and subsequently mixing an ethylene-C₃-C₁₀-1-alkene copolymer having a crystallinity lower than that of the ethylene polymer formed in the second stage.
9. The process as claimed in claim 7 or 8, wherein the polymer prepared in the first stage is a propylene copolymer.
10. A propylene polymer composition obtainable by a process as claimed in any of claims 1 to 9.
11. Use of a propylene polymer composition as claimed in claim 10 for producing films, fibers or moldings.
12. A film, fiber or molding comprising a propylene polymer composition as claimed in claim 10.